Fairfax County

Deer Management Report

2003

Fairfax County Police Department
Animal Services Division
Wildlife Section

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Highlights

- 263 deer harvested during managed hunts and sharpshooting.

- Net cost of (-$79.60) per deer taken in managed hunts and a net cost of $26.85 per deer taken by sharpshooters.

- *Reportable Deer Crashes*

- 241 deer (7.8 tons) processed for distribution to the needy.

- Managed archery hunts successfully conducted at Huntley Meadows Park and Fountainhead Regional Park.

INTRODUCTION

On December 8, 1997, the Fairfax County Board of Supervisors adopted a proposal to pilot managed deer hunts to begin addressing problems associated with the overabundance of deer in areas of the County. In accordance with this plan, County staff conducted a series of pilot programs during 1998 in order to test and improve methods for reducing the deer populations on public lands. In 1999, former County Executive Robert O'Neill, Jr. appointed a committee made up of County citizens and local experts in deer management techniques to evaluate the County's plan for deer management and to make additional recommendations to the Board of Supervisors and staff. This Committee endorsed the County's Integrated Deer Management Plan, the continued use of deer reduction techniques, as well as community education activities to help residents better understand the safety and environmental issues associated with deer overabundance. This Committee also supports the recommendations of the Environmental Quality Advisory Council (EQAC) (Fairfax County, Virginia 2002). The EQAC has long supported both the Integrated Deer Management Plan and the recommendations of the Deer Management Committee. EQAC further supports "a sound ecological approach that emphasizes biodiversity without preferential treatment of particular species."

ACTIONS BY THE FAIRFAX COUNTY BOARD OF SUPERVISORS, THE FAIRFAX COUNTY PARK AUTHORITY, AND THE NORTHERN VIRGINIA REGIONAL PARK AUTHORITY.

The Board of Supervisors approved the recommendations of the EQAC, including the reduction of the local deer population, the formulation of a long-term plan, and the restoration and enhancement of the areas that have been subjected to degradation by deer overabundance.

Thirteen Fairfax County Park Authority (FCPA) parks and eight Northern Virginia Regional Park Authority (NVRPA) parks were approved for possible deer herd management activities. The Boards of each park authority approved managed shotgun hunts, archery hunts, and sharpshooting and determined the most appropriate management method for individual sites.

In the past, the FCPA Board has not approved managed shotgun hunts as a control option. Benefits of this technique will be explored by the Park Authority and the County Wildlife Biologist for future consideration. While managed hunts cannot be considered for all sites, this technique has proven to be the most effective and most economical approach when used early in the management process. All options should be considered in order to best meet the goals of the County's Deer Management Plan.

The following table (Table 1) provides a list of parks that were selected and approved as possible sites for various control actions. Methods listed in boldface type represent the actions taken at that site. Those sites not showing one or more methods in boldface received no control actions this year for various reasons. Some sites proved unsuitable for the methods which had been approved, or deer census data did not exist. If adequate census data could not be generated for particular sites, action at those sites was deferred.

Table 1. List of Parks and Approved Deer Management Methods. Bold-faced Type Represents Actions taken in the Respective Parks.

Park	Size in Sq. Miles[1] (640 acres/Mi^2)	Approved Methods	Managed Hunt Dates
Bull Run Park (NVRPA)	1.36	Archery, Managed Hunts, **Sharpshooting**	
Burke Lake (FCPA)	1.05	Archery, **Sharpshooting**	
Colvin Run S.V. (FCPA)	0.11	Archery, Sharpshooting	
Cub Run S.V. (FCPA)	1.29	Archery, Sharpshooting	
Difficult Run S.V. (FCPA)	1.35	Archery, Sharpshooting	
Ellanor C. Lawrence Park (FCPA)	1.01	**Sharpshooting**	
Fountainhead Park (NVRPA) Occoquan Watershed Properties	1.33	**Archery, Sharpshooting**	**(Archery)** 10/21/02 – 10/24/02
Fox Mill (FCPA)	0.33	Archery, Sharpshooting	
Hemlock Overlook (NVRPA)	0.66	Sharpshooting	
Huntley Meadows Park (FCPA)	2.23	**Archery**, **Sharpshooting, Managed Hunts**	**(Shotgun)** January 14 **(Archery)** Nov. 5 – Dec. 19 Every Tues., Wed., and Thurs.
Lake Accotink (FCPA)	0.63	Sharpshooting	
Lake Fairfax Park (FCPA)	0.72	Sharpshooting	
Meadowlark Gardens (NVRPA)	0.15	Archery, Sharpshooting	
Occoquan Park (NVRPA)	0.63	Sharpshooting	
Pohick Bay (NVRPA)	1.56	Archery, Managed Hunts, **Sharpshooting**	
Riverbend Park (FCPA)	0.63	**Sharpshooting**	
Sandy Run (NVRPA)	0.48	Archery, Sharpshooting	
Scotts Run (FCPA)	0.60	Sharpshooting	
Sully Plantation (FCPA)	0.28	**Sharpshooting**	
Upper Potomac (NVRPA)	0.57	Managed Hunts, Sharpshooting	
Wakefield Park (FCPA)	0.46	Sharpshooting	

1 All park sizes represent dry land or suitable deer habitat (lake acreage is subtracted from total park size) and were obtained from the corresponding Park Authority

SUMMARY OF ACTIONS TAKEN

During the past year, the following actions were conducted to further the goals of the Fairfax County Deer Management Plan:

- Education efforts included a wide variety of outreach programs. Television, radio, web pages, brochures, newspapers, magazines, and public presentations have all been used to inform the public about the Plan and the actions being taken. A more complete list of these activities is included in the *Education and Public Awareness* section of this report.

- One half-day managed shotgun hunt was held on January 14, 2003 at Fairfax County's Huntley Meadows Park, resulting in the harvest of 11 deer. Each applicant was charged a non-refundable $10.00 application fee for the managed hunt lottery. A total of 129 applicants applied for the 33 available slots resulting in revenue of $1,290.00. A lottery was held to select hunters and 33 qualified hunters were selected, which included minorities, women and the mobility impaired. Hunters selected in the lottery were assigned to a specific location within the park.

- Managed archery hunts were held at FCPA Huntley Meadows Park and at the NVRPA Fountainhead property. The Huntley Meadows Park archery hunts were conducted on Tuesday, Wednesday and Thursday of each week from November 5, 2002 to December 19, 2002, excluding the week of Thanksgiving. Two deer were harvested during this 18 day archery hunt. The Fountainhead hunt was conducted from October 21, 2002 to October 24, 2002 and also harvested two deer. The two managed archery hunts took only four deer; however, these two archery hunts provided practical experience to both park authorities. More importantly, these archery hunts established guidelines which will allow future archery hunts to be better conducted with limited County resources.

- Sharpshooting was utilized for deer control in eight parks throughout the County. Sharpshooters visited parks on 34 occasions and harvested a total of 248 deer. This program continues to be refined with various types of equipment and techniques being tested for suitability each year. The cost per deer taken increased this year due to costs associated with processing the venison. Efficiency decreased from 2.0 deer per hour last year to 1.6 deer per hour this year. This is a result of fewer deer being present and those remaining deer being more difficult to approach. Variations of this technique are used to minimize the opportunity for deer to adapt their behavior in response to sharpshooting pressure.

- Deer herd density surveys were conducted in four parks. Deer herd densities in all of the parks surveyed were well above the adopted goal of 15-20 deer/mi^2. The deer herd density in the County parks ranged from 37 deer/mi^2 to 185 deer/mi^2.

RESULTS

- As a result of the control efforts 263 deer were taken a 20% reduction from the previous year. The reduction in total numbers from last year is attributed to the reduced number of managed hunts; 2 last year and only 1 this year. The managed shotgun hunt conducted this year took a total of 11 deer. The managed archery hunts took a total of four deer. Of the fifteen deer taken on managed hunts 10 of them were does. The sharpshooting program took 248 deer, a 23% increase over last year and a 69% increase over 1999. Of the 248 deer taken during sharpshooting 149 were does. The combined total of 159 does will make a significant difference in the growth rate of these herds. Most adult does would produce twin fawns in the spring. However, even if a conservative figure of only one fawn produced per doe is used, the result is 422 (including the bucks taken) fewer deer in these parks this spring of 2003.

  One method of measuring the results is to consider the vegetation these deer would have consumed. A deer eats 4-6 pounds of food per 100 pounds of body weight each day. Assuming an average consumption of 5 pounds and a conservative average body weight of 100 pounds, these deer would have eaten approximately 2,110 pounds of vegetation each day. In a year this would amount to about 770,150 pounds (385 tons) of vegetation removed from these parks and the surrounding neighborhoods.

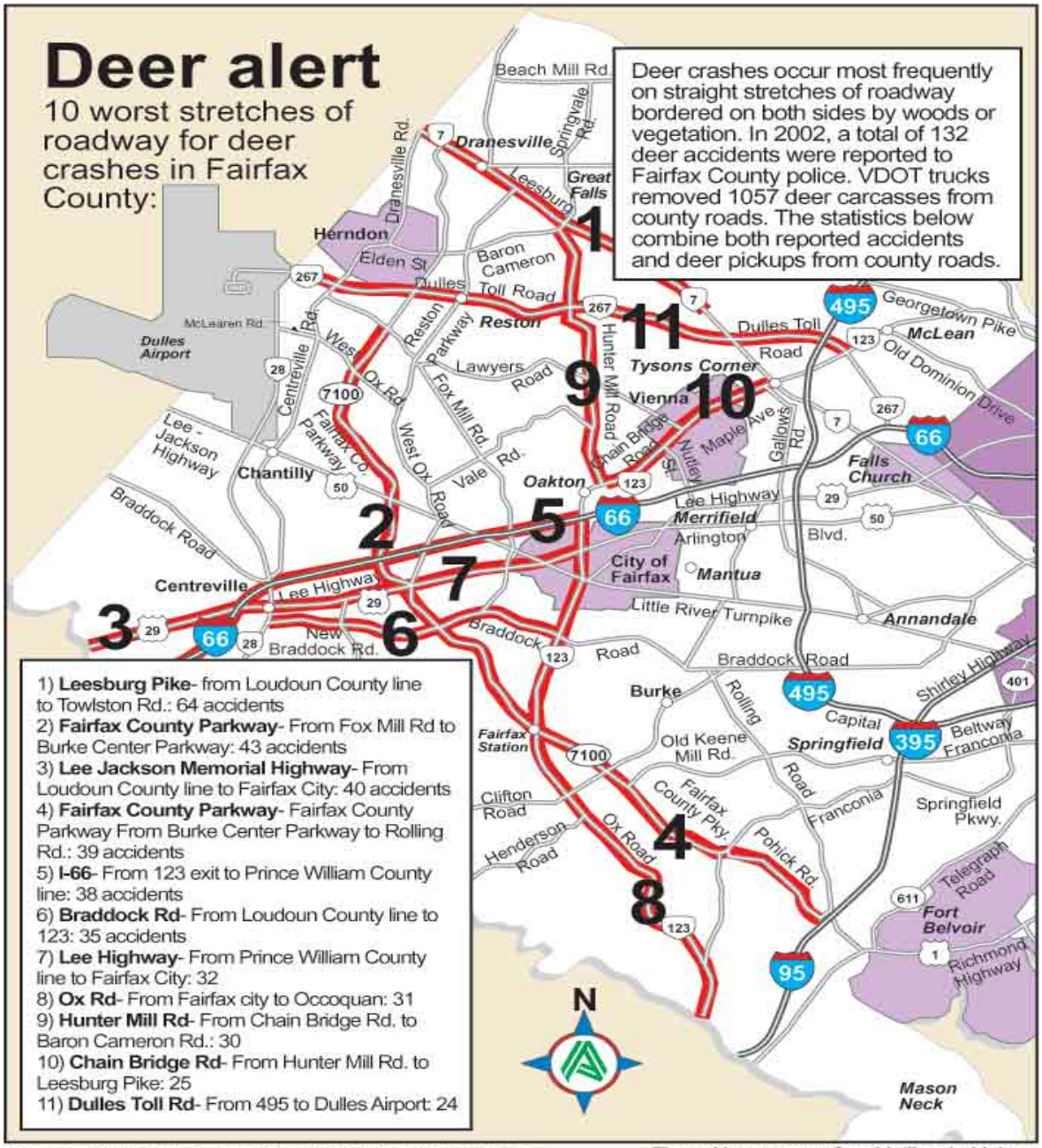
  There were 1,057 deer picked up on Fairfax County roadways in 2002. This is a 21% increase over 2001. This is the first increase observed since the beginning of the Deer Management Program in 1998. The increase is a result of many combined factors including an increase in traffic volume, human population, urban development and loss of habitat. The Virginia Department of Transportation (VDOT) predicts a 5% increase in traffic volume each year. A 5% increase each year over a five year period, results in a total predicted increase of 25% since the initiation of the Deer Management Program in 1998. The VDOT pick-ups, although higher this year than last, are 6% below the 1998 number of pick-ups (1131) and 27% below the peak of 1,438 in 1996. Several County roadways have been identified by FCPD analysts as higher risk travel routes. A map of the higher risk roadways in Fairfax County is provided in Graph 1.

- In 2002 kill permit requests to the Virginia Department of Game and Inland Fisheries (VDGIF) increased 26% compared with the previous year. However, the number of deer harvested under these permits dropped 37% from 2001. This indicates County residents are more aware of their options for controlling deer herds in suburban areas.

Efforts are helping to spread the word a, but the number of deer harvested under the permits continues to increase. In 2001, the number of kill permits issued to Fairfax County residents declined 25% to 148 permits compared with 2000, yet the number of deer harvested under these permits increased 51% to 398 deer. This is very encouraging. This indicates the deer numbers are declining in certain areas resulting in fewer permits being issued. However, in areas that continue to struggle with over sized deer herds, permits continue to be issued and are more productive, resulting in greater harvests and herd control. The number of does harvested using kill permits increased 38% over last year to 286 does.

- Meat Donation this year was coordinated through Food For Others. For the previous 2 years Food For Others has been the recipient of a state grant to pay processors to prepare and package the venison and defer costs from the county. However, this grant was not approved for 2002. Therefore, the county had to contract for deer processing. The county approved a contract to process 222 deer to be distributed to Food for Others. A total of 241* deer (7.8 tons) were taken to the processor for distribution to the needy. The remaining 26 deer were donated to Hunters for the Hungry. The cost of processing the deer in 2002 added $9,990 to the total cost of sharpshooting.
  - Seven deer were unsuitable for human consumption.

Graph 1. Ten Highest Risk Roadways in Fairfax County



EDUCATION AND PUBLIC AWARENESS

Education efforts continue to expand, including the Environmental Quality Advisory Council's *Annual Report on the Environment*, the Fairfax County Deer Management brochure, the Fairfax County Deer Management web page, the Fairfax County Police Department's Deer Crashes web page, speaking engagements, acquisition of reference books on deer related topics by public libraries, and gardening workshops. While direct dialogue continues to be one of the most beneficial forms of education, this method serves only a limited number of people. The benefit of this method allows citizens to get all questions answered and staff to measure citizen support or concerns. These opportunities occur during speaking engagements at homeowner associations, club or professional organization meetings, and exhibits at public events such as Celebrate Fairfax.

An interactive display on wildlife concerns was again part of the award winning Public Safety display presented during the Celebrate Fairfax Festival. Celebrate Fairfax provides an opportunity to reach a large number of County citizens. These large events are perfect venues for wildlife displays.

For the fourth year in a row, the Animal Services Division was invited to provide a display about white-tailed deer and other urban wildlife at the National Zoo during their celebration of International Seal Day. This two-day event attracts very large crowds (16,000+ per day) and many of the visitors are Fairfax County residents. Comments received from visitors were overwhelmingly supportive of the County's Deer Management activities.

As education is a dynamic and continual component of the Fairfax County Integrated Deer Management Plan, some examples of educational efforts during the last year included:

- The Wildlife Biologist provided a display at Pohick Bay Regional Park to increase public awareness regarding white-tailed deer and the Deer Management Program.

- Channel 16 County Magazine , Deer, Geese and Beaver

- The Police Department Public Information Office again produced a news release on safe driving tips to heighten public awareness of the increased hazard that deer pose during the fall rut.

- Cards are being printed with the URL of the Deer Management web page for distribution at major events, as well as smaller presentations. This web page provides direct information and also excellent links to other related and informative web pages.

- The Police Department has applied for a block of airtime on Channel 16 to provide a recurring show about urban wildlife. This show would highlight wildlife issues and provide information and techniques citizens could use to avoid conflict with various species.

- The Wildlife Biologist again presented programs and had a display on white-tailed deer and other urban wildlife at the Providence District Environmental Workshop.

- Staff has begun a cooperative project with FCPA to establish demonstration exclosures in various parks to educate visitors on the effects of deer overbrowsing on park habitats.

- The Wildlife Biologist, in partnership with the Police Department's Crime Prevention officers, used this well-established program as a means of meeting with local communities to answer citizen wildlife concerns and to disseminate information about the County's wildlife programs.

- The Wildlife Biologist and Master Police Officer Bob Wall, Traffic Division, spoke about deer related traffic issues and the effects of overabundant deer herds on the environment at the Council of Governments Wildlife Symposium.

- Fairfax County has effectively used the Internet by posting updates of information on deer. Deer control efforts and deer-related human safety issues are also covered and updated as new information becomes available.

- Fairfax County Police Department Animal Services participates as a member of the metropolitan area Council of Governments (COG) Animal Services committee's wildlife workgroup.

- Traveling displays are being prepared which will be placed in park visitor centers, nature centers, libraries, community centers and other public facilities. These displays will serve to educate citizens about deer, deer-related concerns and the County's Integrated Deer Management Program.

MANAGED HUNTS

Managed hunts have proven to be a valuable tool in large parks. Both the NVRPA and the FCPA have now approved managed hunts as an acceptable technique. Before any managed hunts could take place, arrangements had to be made with shooting ranges in Fairfax County to conduct firearms qualifications for those selected in the managed hunt lottery. Qualification standards were developed in cooperation with personnel from U.S. Fish & Wildlife Service and the Virginia Department of Game & Inland Fisheries (VDGIF). These standards are now accepted for all managed hunts occurring in Fairfax County. This is more convenient and efficient for both the hunters and the agencies involved. By having local shooting ranges conduct the firearm qualifications County staff was not required and, therefore, there was no expense for the County. The use of shotgun slugs is being considered for future managed hunts. This would result in increased accuracy and enhanced productivity.

One half-day managed hunt was conducted in Huntley Meadows Park, on January 14, 2003. This was the first shotgun hunt approved by the FCPA board. This hunt resulted in 11 deer being harvested by 33 qualified hunters. Low productivity was partially a result of half the park being open to the public. This allowed deer to move to areas of the park not occupied by hunters. The Huntley Meadows Park hunt was conducted in a safe and secure manner in a park that was partially open to the public. This hunt will provide a logistical plan for Fairfax County shotgun hunts in the future.

These hunts illustrate the effectiveness of a well-planned and orchestrated managed hunt as a management tool. Presently, managed hunts are being used in Fairfax County by the NVRPA, Mason Neck National Wildlife Refuge, and Mason Neck State Park. Managed hunts should be considered as a technique to reduce deer herds in the larger Fairfax County parks in view of their practical and effective quality.

Bull Run Regional Park was originally identified as having the highest density of deer per square mile in Fairfax County. The Deer Management Program has harvested 558 deer from Bull Run Park alone in the past four years (as provided in Table 2 below) indicating the magnitude of the deer overpopulation. It was also estimated that it would take a minimum of five years to reduce this herd to the desired density of 15 – 20 per square mile. This goal may have been obtained in just four years. A new census will be conducted in August 2002 to reassess the control needs for this park. It is expected that only minimal control efforts will be needed at this park next fall. As expected, the Bull Run data is indicating a progressively healthier deer herd, resulting from fewer deer and an improving ecosystem. Average weights in 2002 are up 12 pounds for male and female fawns and up 18 pounds for yearling females since control efforts started in 1998. Consequently, Bull Run Regional Park, as well as Upper Potomac and Meadowlark Gardens, has been moved to a monitor/maintenance phase utilizing periodic control or minimal annual control as needed.

Table 2. Total Bull Run Park Harvest by Year (Managed Hunts and Sharpshooting)

Year	Does	Bucks	Total Deer Harvest Per Year
1998-1999	N/A	N/A	77
1999-2000	90	31	121
2000-2001	160	82	242
2001-2002	55	45	100
2002-2003	9	9	18
Total			**558**

The following tables (Table 3 and Table 4) contain the details of this year's managed hunts as well as a comparison with hunts from prior years. Future managed hunts should be announced well in advance to optimize the number of responses by lottery applicants. Fairfax County managed hunts should also be coordinated with State and Federal agencies in the area so there is no competition from other managed hunts in the region for qualified hunters.

Table 3. 2002 Managed Hunts Totals

Location	Date	Hunters	Does	Bucks	Total
Huntley Meadows Park	1-15-02	33	8	3	11
Totals		**33**	**8**	**3**	**11**

Table 4. Managed Hunts Comparisons from 1999-2003

	1998/99	1999/00	2000/01	2001/02	2002/03
Half Day Hunts	8	4	7	2	1
Total Hunters	142	134	222	115	33
Total Deer Taken	60	195	351	119	11
Deer Taken per Hunt	7.5	48.8	50.1	59.5	11
Success Rate	0.42253	1.455	1.58	1.03	0.33
Best One Day Total	13	81	147	96	11
Worst One Day Total	0 (rain)	11 (rain)	11 (windy)	23	11
Total Cost (Regular + OT - Revenue)	$66,607.18	- $1,855.12	$8,165.35	- $867.41	-$875.58
Net Cost per Deer	$1,110.12	-$9.51	$23.26	-$7.28	-$79.60

PILOT ARCHERY PROGRAM

The pilot archery program was continued at Huntley Meadows Park (FCPA) and Fountainhead Park (NVRPA). The archery hunts are summarized in Table 5. Huntley Meadows conducted an eighteen day hunt coordinated by Belvoir Bowhunters, which ran from November 4, 2002 through December, 19 2002. Hunters were allowed to hunt in the park every Tuesday, Wednesday and Thursday, with the exception of Thanksgiving week. The Huntley Meadows archery hunt harvested two deer.

Fountainhead Regional Park conducted one four-day hunt from October 21, 2002 to October 24, 2002. Two deer were harvested at Fountainhead. Competition with the state wide archery season and the opportunity to harvest bucks in other areas of the state reduced hunter participation in both hunts. In the Fairfax County managed archery hunts, hunters are allowed to harvest a buck after harvesting a doe in a specific park. However, many archery hunters are more concerned with trophies than controlling the overabundance of deer.

These archery hunts provided beneficial experience regarding the logistical requirements of a managed archery hunt. They also provided valuable experience in cooperative partnerships between County agencies, DOD, VDGIF, and local archery clubs. The associated costs to the county are very low with regards to this year's archery hunts. The Huntley Meadows hunt was a cooperative effort between the Wildlife Biologist, the County Park Authority and Fort Belvoir Recreation Center. Each hunt day, activities were coordinated by Fort Belvoir and Belvoir Bowhunters. Fort Belvoir provided access to the hunt areas and a safety plan to ensure everybody is out of the park using the system they already have in place. County resources were used only to initiate and set-up the hunt, and from there Fort Belvoir took over.

The Fountainhead archery hunt was coordinated through Northern Virginia Archers. Again the County help set-up the guidelines and let the Northern Virginia Archers govern the archers once the hunts began. Park employees were present once at the end of each hunt day to ensure all hunters were safely out of the woods and the gate was locked. Steps such as these will further reduce the cost of these archery hunts to the County in the future.

Table 5. 2002-2003 Pilot Archery Managed Hunts

Park	Dates	Does	Bucks	Total
Fountainhead	10/21/02 - 10/24/02	1	1	2
Huntley Meadows	11/5/02 - 12/19/02 Every Tues., Wed., and Thurs.	1	1	2
Totals		**2**	**2**	**4**

SHARPSHOOTING

Sharpshooting continues to be a safe and productive method for deer control. The sharpshooters visited 7 parks, on 34 occasions and harvested 248 deer, a 23% increase over the previous year. The cost per deer taken in 2002-2003 increased 60% from the previous season. Food for Others for the past two years (2000 and 2001) received a state grant to cover the costs of processing the venison in Fairfax County. Food for Others was not appropriated the meat processing grant in 2002 and the costs have been absorbed by the county. The cost of processing the venison added $45 to the cost of each deer harvested. Without the cost of processing the venison, the total cost per deer decreased 40% from the previous year to $26.85. Table 6 provides a cost comparison for the past 5 years of sharpshooting activity.

Efficiency decreased slightly from 2.0 deer per hour in 2001 to 1.6 deer per hour in 2002. This was a result of attempting to attain goal densities (15-20 deer/mi^2) in two parks, Huntley Meadows Park and Ellanor C. Lawrence Park. Nearly 60% of the sharpshooter's time was spent at these two parks. These parks have been utilized by the sharpshooters for 3-5 years, as well as archery hunters and shotgun hunters more recently at Huntley Meadows Park. Deer respond to these threats by adjusting their behavior and routines and consequently become more difficult to approach. As deer densities decrease, sharpshooter efficiency decreases as well, resulting in more man hours required to harvest fewer deer.

This should be the case when sharpshooters visit new parks for the first time because these parks have higher herd densities and the deer are less acquainted with sharpshooting techniques. However, as herd density goals are approached, more staff hours are required to locate and remove an ever diminishing number of deer. For this reason, the ideal control program uses a variety of techniques and mixes them to prevent or diminish this response.

When compared with similar programs, the County's cost per deer taken (see Table 6) remains hundreds of dollars below the cost experienced by others. In New Jersey the Princeton Township Committee contracted the wildlife management firm, White Buffalo, to reduce the town's deer herd. White Buffalo culled 322 deer at a cost of $90,000 to the township resulting in a net cost of $280 per deer. The cost per deer for Fairfax County remains low because of efficiencies designed into the program. These include using existing County resources and developing a site-specific plan for each park. These plans include an estimate of the size of the deer herd and a determination of areas of deer activity, safety considerations, and infrastructure.

The Fairfax County sharpshooting program has proven to be safe, effective, and economical. Other communities from across the country look to our program as a model of success. Local jurisdictions from both Virginia and Maryland have worked with our staff in the past or are currently doing so to design and implement similar programs.

The following tables (Table 6, 7, and 8) list cost data and specific result and park information.

Table 6. Sharpshooting Cost Comparative Analysis

Expense	(Pilot) 1999	1999-2000	2000-2001	2001-2002	2002-2003
Total Expense (regular salaries, overtime, and supplies)	$6,642.48	$4,824.34	$12,304.11	$9,042.06	$6,658.38 + $9,990 ($16,648.38)
Deer taken	107	89	146	201	248
Cost per deer	$62.07	$54.21	$84.27	$44.99	$26.85 ($71.85)

Table 7. 2001-2002 Sharpshooting Assignments/Results by Date

Date	Park	Hours	Doe(s)	Buck(s)	Total
11/13/02	Pohick Bay	7.5	1	2	3
11/18/02	Fountainhead	2.0	0	1	1
11/19/02	Fountainhead	2.5	0	1	1
11/19/02	Pohick Bay	5.0	0	1	1
11/20/02	ECL	12.0	6	9	15
11/25/02	ECL	9.0	5	3	8
11/26/02	Pohick Bay	2.0	0	0	0
12/3/02	ECL	7.5	1	2	3
12/9/02	Burke	9.0	9	3	12
12/16/02	ECL	7.0	3	6	9
12/17/02	Riverbend	5.5	12	11	23
12/30/02	ECL	9.0	9	5	14
1/6/03	Riverbend	6.0	9	1	10
1/15/03	Burke	6.0	2	5	7
1/16/03	ECL	2.5	2	2	4
1/21/03	Bull Run	3.5	4	6	10
1/22/03	Huntley Meadows	5.0	6	2	8
1/28/03	Riverbend	3.5	13	3	16
2/3/03	Huntley Meadows	4.5	6	1	7
2/5/03	Sully	1.0	0	4	4
2/5/03	ECL	1.75	1	0	1
2/5/03	Bull Run	2.75	5	3	8
2/11/03	Riverbend	3.0	7	4	11
2/26/03	Bull Run	3.0	0	0	0
3/4/02	Riverbend	2.0	1	1	2
3/11/03	Huntley Meadows	6.5	4	5	9
3/12/03	ECL	4.5	11	4	15
3/18/02	Huntley Meadows	6.0	8	4	12
3/19/03	ECL	2.0	2	0	2
3/24/03	Huntley Meadows	6.0	7	3	10
3/25/03	Riverbend	2.75	9	4	13
3/26/03	ECL	3.0	4	2	6
3/31/03	Sully	0.5	0	0	0
3/31/03	ECL	2.5	2	1	3
TOTALS		**156.25**	**149**	**99**	**248**

Table 8. 2002-2003 Sharpshooting Total Results by Park

Park	Hours	Does	Bucks	Total Deer
Bull Run	9.25	9	9	18
Burke	15.0	11	8	18
Eleanor C. Lawrence	60.75	46	34	76
Fountainhead	4.5	0	2	2
Huntley Meadows	28.0	31	15	46
Pohick Bay	14.5	1	3	4
Riverbend	22.75	51	24	73
Sully	1.5	0	4	4
Totals	**156.25**	**149**	**99**	**248**

OTHER KNOWN CAUSES OF DEER MORTALITY

It is important to record and track other causes of deer mortality in order to develop an accurate understanding of the deer population within the County. These other causes include the following:

Road-killed Deer in 2002

There were 1,057 deer carcasses picked up by VDOT during 2002, a 21% increase over 2001. One study (Decker et al., 1990) determined that actual deer-vehicle collisions are 6 times higher than the number reported as recovered carcasses. Another study (Allen and McCullough, 1976) indicated that deer-vehicle collisions are fatal to deer 92% of the time. However, this figure would be greatly influenced by average vehicular speed. A conservative estimate of deer killed by vehicles would be 2 x 1,057 and this number will be used to account for deer which died off the right-of-way and those deer picked up by others. This number should not be confused with the actual number picked up as that is the number we typically track. The figure used here is an estimated number of deer killed in vehicle/deer collisions.

Total……..……...2114

Destroyed As a Result of Injury

Fairfax County Animal Control Officers and police officers are routinely dispatched to answer calls regarding injured deer. Most of these deer were injured as the result of an automobile accident. The other most common cause of the injury is due to a collision with a stationary object (fence, plate glass window, etc.). The following data is for the 2001 calendar year.

Total……....195

Epizootic Hemorrhagic Disease (EHD)

EHD was first diagnosed in Fairfax County during the fall of 1999. Fifty-three dead deer were found in the southeastern portion of the County. This disease is of no threat to humans. Weather plays an important role in this disease. If the late summer weather is conducive to the production of the insects which transmit the disease, another episode could follow. There were no known outbreaks of EHD in Fairfax County in 2002.

Total……...0

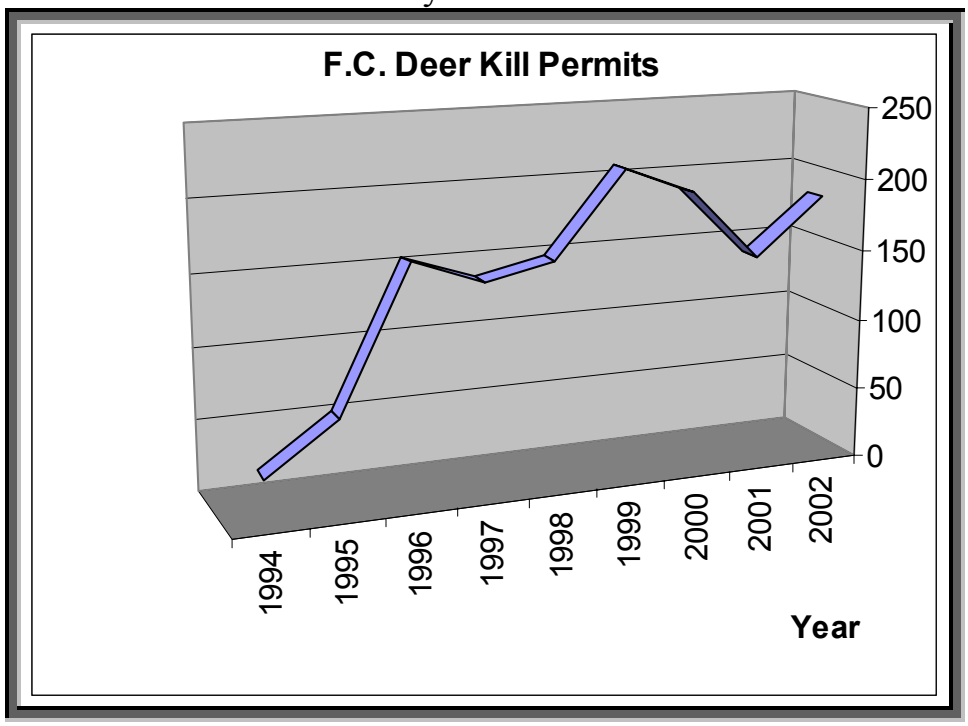
Kill Permits

The Virginia Department of Game and Inland Fisheries (VDGIF) issues kill permits to property owners who can show evidence of deer damage. These permits allow the property owner or those designated by the owner to kill deer on the property outside of the normal deer hunting season. The importance of this program cannot be understated. The deer taken under this method and those taken during the regular deer hunting season are currently the only means available to provide relief to private communities. Although some larger properties utilize firearms, most of the deer are taken with archery equipment. The number of permits issued each year should not be used as a measure of deer damage. The method of issuing such permits has changed, as has public awareness of this option. The VDGIF issued Fairfax County residents 187 kill permits in 2002 (a 26% increase from 2001), and these resulted in 249 deer (a 37% decrease from 2001) being harvested (208 of which were does). Graph 1 is provided to illustrate the trend in kill permits numbers from 1994-2002.

Deer harvested in 2002 under the kill permit program included 208 does and 41 bucks.

Total……..……..249

Graph 1. Number of Fairfax County Deer Kill Permits 1994-2002



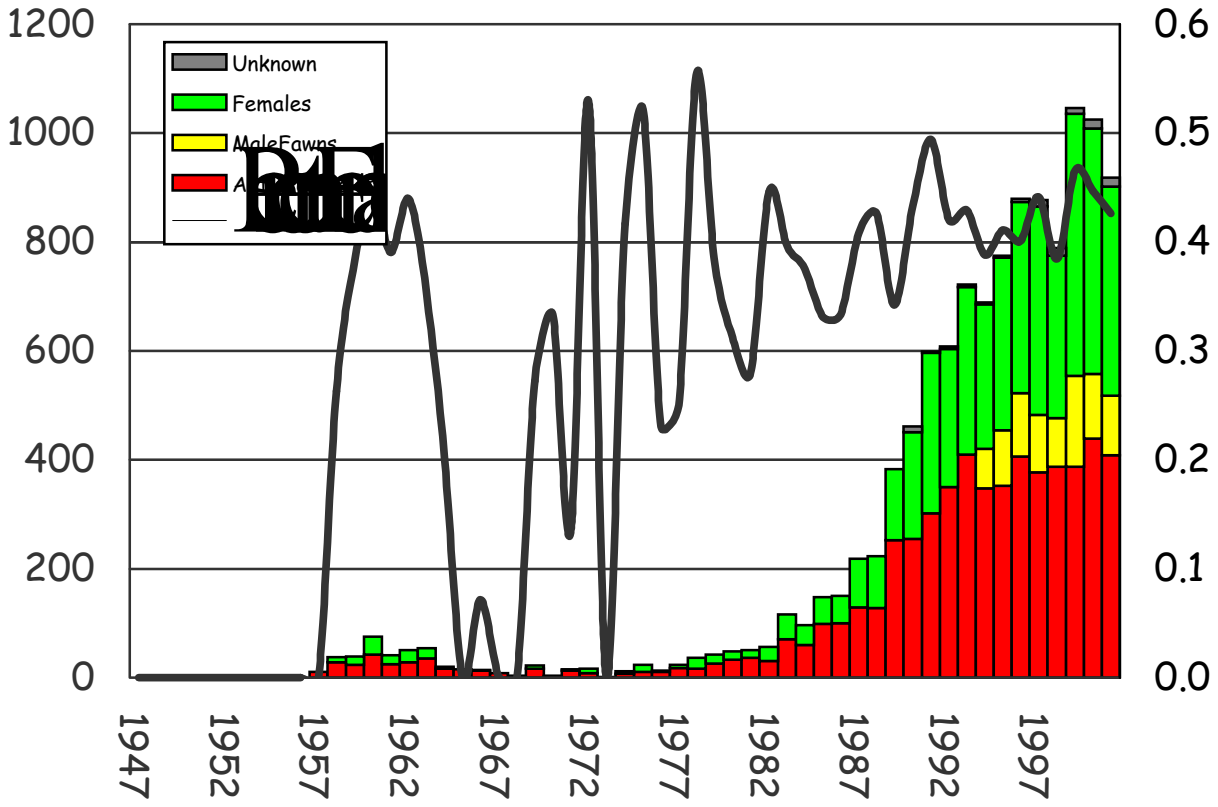
Hunting in Fairfax County

The rapid development and growth of Fairfax County continues with a corresponding loss of habitat. This forces deer and other wildlife into an ever diminishing area of available habitat. With this growth also comes a diminishing area in which the safe use of firearms is feasible. These factors have contributed to the growth of archery as the predominant means of deer control on private property. Archery has several advantages over firearms. It is quiet and safe, and, as most deer taken by archers are from less than 20 yards, hunters are generally able to better identify the age and sex of the targeted deer. As most archers hunt from elevated tree stands their shots have the ground as a backstop.

In 2001 hunters in Fairfax County took a total of 918 deer. Of that total, 628 were taken with archery equipment and the remaining 290 were taken with shotguns. This level of effort by private landowners is a very important component in the overall approach to managing the County's deer herd. The history of Fairfax County's deer harvest from 1947 to 2001 is presented in Graph 2.

Graph 2. Fairfax County Deer Harvest from 1947-2001

Produced by Matt Knox and provided Courtesy of the Virginia Department of Game and Inland Fisheries



As this data and the success of the Fort Belvoir program below illustrate, archery can be a valuable tool in the management of a deer herd. The safety of this method for the general public is unsurpassed. This is one of the few methods that would work in some of the smaller parks and some of the narrower stream valley parks. It also is the most economical method for maintaining a herd at desired densities once those densities have been achieved through managed hunts or sharpshooting.

The VDGIF has now authorized an early urban archery hunting season for urban areas experiencing overabundant deer herds. Fairfax County will again be participating in the early archery season during the 2003-2004 hunting season. The archery season will be expanded two weeks and will start on September 21 rather than October 5. The Virginia Department of Game and Inland Fisheries amended the early urban archery season and expanded the season with a special **late** urban archery season. This season will run from the Monday following the first Saturday in January through the last Saturday in March. This will be a great asset in dealing with the County's deer management issues by increasing the number of days hunters can hunt and consequently increasing the County's deer harvest.

Other Hunting Activity in Fairfax County

Mason Neck National Wildlife Refuge & Mason Neck State Park:
Three one day (all day) hunts harvested 40 does and 31 bucks.

Total.....…….....…….71

Fort Belvoir (archery only, full season):
82 does and 79 bucks were taken.

Total……..…161

DEER POPULATION ESTIMATES FOR COUNTY PARKS

Deer population estimates were conducted by the Wildlife Biologist in four County parks in 2002 using infrared-triggered cameras and a ratio driven model as designed by Harry A. Jacobson et al (1997) at Mississippi State University. The survey can only be conducted when male deer have their antlers so there is limited time to accomplish this laborious task. The model computed deer densities between 37 deer/mi^2 and 185 deer/mi^2 in the park censuses. The parks surveyed and their estimated populations are provided in Table 7. The model only estimates deer populations and many factors can influence deer behavior and thus the model. These factors include food availability, mating behavior, local hunting pressure, social hierarchy, adjacent land uses, and human activity. Deer do not recognize park boundaries and thus are in constant flux in and out of the parks. The numbers in the table represent data obtained only in the parks and deer numbers are greatly influenced by contiguous habitat and land uses. Riverbend Park estimates were attempted, but the study was conducted too late in the season (many bucks had lost their antlers) to produce reliable data.

Spotlight surveys have been conducted by the FCPA in individual parks for several years to determine deer populations and population trends. The results of those surveys are also presented in Table 9. The spotlight surveys, although different from the camera surveys, offer

more evidence of the high deer densities found in the County's parks and provide valuable trend data.

Table 9. Fairfax County Estimated Deer Populations in Selected Parks for 2002-3 (640 acres/mi^2)

Park	Square Miles	1999	2000	2001	2002	Deer/mi^2 2002
Bull Run (Ordway Rd. section only)	0.31	419[1]	-	162	26	84
Burke Lake	1.05	-	155	92	-	-
Difficult Run	0.23	-	-	-	43	185
Eleanor C. Lawrence	1.01	173[2]	178[2] 83	273[2] 93	154[2]	152
Huntley Meadows	2.23	220-250[2]	75-115[2]	145	-	-
Lake Accotink	0.63	-	104	121	-	-
Occoquan	0.63	-	-	27	-	-
Pohick Bay	1.56	-	-	-	58	37
Riverbend	0.63	-	-	-	55	88
Sandy Run	0.48	-	-	44	-	-
Sully	0.28	-	-	76	-	-
Upper Potomac	0.57	-	-	27	-	-
Wakefield	0.46	-	28	57	-	-

1 Northern Virginia Regional Park Authorities Estimates
2 Fairfax County Park Authority Estimates
All other census data was collected by the Fairfax County Wildlife Biologist

SAFETY

Public safety is often cited as a concern about managed hunts and sharpshooting. Once again there were no incidents in either the managed hunts or the sharpshooting missions which posed any threat to the public. In addition to "Closed at Dark" signs posted at each park, the tactical team, park employees, and others participating in the sharpshooting activities make every effort possible to ensure the park is free of patrons before beginning sharpshooting activities. Parking lots are checked to be clear of vehicles and paths, leading to or from residential areas, are walked to be sure they are also clear.

There was one minor injury involving a Fairfax County Police Officer during the course of this year's activity. The Officer is a member of the Tactical Team and is a sharpshooter for the Deer Management Program. The Officer received a minor laceration above his eye as a result of shooting his rifle and his scope/night vision module impacting his forehead. He was released from Fairfax Hospital after receiving basic first aid.

ROADSIDE REFLECTORS

The Fairfax County Police Department has completed its third and final year of the Deer Crash Abatement Program. The program was primarily funded through Department of Motor Vehicle grants totaling more than $81,000. Roadside reflectors have been installed along seven sections of highway within the county. The first three of the locations were completed by November of 2000. Data has been collected and compiled for these sites. The remaining sites have not been completed long enough to make significant data analysis practical.

For clarification, it is important to differentiate between the terms "deer related crashes" and "dead deer pick-ups." Deer related crashes is a term used by the Police Department to designate accidents in which collision with a deer resulted in personal injury or property damage of $1,000 or more. Dead deer pick-ups are the number of dead deer removed from highway rights-of-way by the Virginia Department of Transportation (VDOT). Mike Uram, OSB Crime Analyst, compiles these data. Mr. Uram compiled the number of deer related crashes and the dead deer pick-ups from 1998 to the installation date and from the installation date to February 2002. This was done for each of the three sites.

The first site is the section of Telegraph Road between South Kings Highway and Old Telegraph Road. This site showed an increase of 8.6% in deer related crashes and a decrease of 70% in dead deer pick-ups. The second site is the Fairfax County Parkway between Braddock Road and Popes Head Road. This section showed a decrease in both categories. Deer related crashes decreased 61% and dead deer pick-ups decreased by 42%. The third site is the Fairfax County Parkway between Franklin Farm Road and Sunrise Valley Drive. Here deer related crashes decreased 42% while deer related pick-ups increased 75%. As these figures indicate, no conclusions can be drawn about the efficacy of the reflectors. Two of the sites (Telegraph Road and the Fairfax County Parkway between Franklin Farm Road and Sunrise Valley Drive) now have physical barriers that prevent or inhibit deer crossings. These barriers include stockade fencing, chainlink fencing or sound abatement walls. The sound abatement walls are virtually deer proof due to their height.

Proponents of the reflector technique point out that the reflectors are not maintained or kept clean. This is indeed a problem, as this responsibility has not been assigned. VDOT has stated repeatedly that they would not assume that responsibility. This problem is currently under study.

One evening shortly after the reflectors had been installed near Rugby Road, a Fairfax County Traffic Safety Officer observed a deer related crash which had just occurred. On another evening, three weeks later, the officer observed a second deer related crash in the same area.

In an attempt to better understand whether or not these reflectors provide any safety benefits, data for similar sections of highway (minus reflectors) will be compared to the study sites. These results will be provided in next year's report.

2003-2004 PROGRAM

Data collection and herd assessment will continue in the parks listed in Table 1. Additional parks may be added to the list if circumstances warrant. The control techniques listed for those parks will again be considered. This year, managed hunts may be considered for use in parks of appropriate size. Sharpshooting will be used to supplement those efforts and will be utilized in parks deemed unsuitable for managed hunts. Archery will be considered as a maintenance option or as a control option at sites deemed inappropriate for other approved techniques.

Displays will be set up by the Wildlife Biologist at several parks where sharpshooting will commence next year to educate park patrons regarding the deer overabundance and deer management techniques that may be implemented. The displays will be manned by the Wildlife Biologist at large park activities to answer questions directly and unmanned displays will be placed in visitor centers or offices where informed park employees can answer patron's questions.

New techniques to address deer being hit on the highways are being explored as pilot programs for the County. One approach is the installment of oversized signs on highways with high incidents of deer-vehicle collisions. The larger signs would be installed to improve driver awareness of deer crossing highways and help reduce speeds in areas with high numbers of deer-vehicle collisions. Another method being investigated is the installment of seismic receptors that could detect approaching deer and activate lighted signs to warn drivers. Both of these techniques would be performed in cooperation with VDOT and thus would take considerable time to initiate. Proper permits and permission would have to be obtained from the appropriate authorities before the pilot programs could be started.

Surveys will be prepared and mailed to residents living near the parks that have been moved to the "monitor list." One of the issues, among others, these surveys will address is whether the residents of these areas have observed a corresponding decrease in deer-related problems.

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Appendix A

Herd Health Evaluations

Given the amount of snow and the duration the snow remained on the ground, the winter of 2002-2003 provided a challenge for deer in Fairfax County. This also provided a prime opportunity to establish a baseline for deer herd health in the county after a difficult winter. The Fairfax County Wildlife Biologist conducted herd health evaluations on 5 female deer at Huntley Meadows Park. Two of the deer were adults, two were yearlings and one was a fawn, the results are provided in Table 10. The herd health evaluations were performed on March 24, 2003 and an explanation of the methods is provided in Appendix A. Evaluations are usually conducted in December or January. Therefore, average weights, fat deposits and bone marrow values should be slightly below previously conducted evaluations. Average weights for adult does and yearling does were 69.5 lbs and 54.0 lbs, respectively. These weights are considerably below previous averages in the county of 81.2 lbs for adult does (Bull Run 2002) and 62 lbs for yearling females (Mason Neck 2001). The visceral and bone marrow fat deposits were non-existent. Bone marrow fat rated an average of 5 on the New Hampshire Bone Marrow Scale. The general condition of the deer at Huntley Meadows Park is Poor. The overall values indicate the deer herd is still well above the goal densities of 15-20 deer/mi^2. Even when goal deer densities are attained there will be a significant lag in the vegetative community due to years of relentless exploitation.

It should be noted that the values used to compare the most recent herd health evaluations (i.e. the Bull Run and Mason Neck numbers) are also taken from areas of high deer densities. Therefore, the comparison is between two areas of high deer density and if compared to state wide averages the differences would be even greater.

Table 10 Deer Herd Health Evaluation, Huntley Meadows Park

Deer #	Sex	Age	Dressed Weight	Condition Rating	B.M.	General Condition	Fetus(es)	Conception Date
1	F	0	42	5	6	Emaciated	NA	11-21-02
2	F	2.5	67	25	5	Poor	M, F	11-25-02
3	F	1.7	54	25	5	Poor	NA	NA
4	F	4.5	72	20	5	Poor	M	11-09-02
5	F	1.7	54	5	5	Emaciated	F	11-26-02

AVERAGES	# in Sample	Dressed Weight	Condition Rating	B.M.	General Condition	Fetus(es) per Doe	Avg. Cncp. Date
Ad. Females	2	69.5	22.5	5	Poor	1.5	11-17-02
1.7 Females	2	54	15	5	Poor	0.5	11-26-02
Fawns	1	42	5	6	Emaciated	0	0

Herd health is directly related to deer density and habitat quality. Throughout the five years the Deer Management Program has been active, a total of 1,448 deer have been removed from the county's parks utilizing managed hunts and sharpshooting. Population models indicate that without deer management activities the 1,448 deer removed from parks in previous years would today represent between 5,219 and 6,865 animals. These numbers are additive to the present population and their numbers would add considerably to the vegetative devastation our parks and private properties have endured in recent years Bull Run Park would today represent over 3,000 animals. Although Bull Run's numbers represent half the total estimate for the county, 66% of these animals were female and these animals were removed longer ago (most of them 3-5 years), thus they have more generations to produce offspring.

March 21, 2002

Mr. Rodney Pryor
Northern Virginia Regional Park Authority
5400 Ox Road
Fairfax Station, VA 22039

Dear Rodney:

Congratulations for conducting such a safe and effective managed deer reduction at Bull Run Regional Park. You and your staff (along with Earl and company of course!) did an excellent job of organizing and conducting the event. As you recall, ninety-six deer were harvested. The purpose of this letter is to provide you with the results of the deer herd health evaluation. Five adult does and one yearling buck were necropsied and evaluated during the managed shotgun hunt. Please refer to Table 1 for overall sample information.

I have also enclosed the 2001 Bull Run Harvest Summary, which breaks down the information collected from each deer. The summary lists deer kill information since 1998. Major points to note from the summary include,

- the harvest of 70.5 deer per square mile was down significantly when compared to the amazing 171.9 deer/sq. mile killed last year
- percent female deer harvested was 55%, down from a high of 89% in 1998
- yearling female dressed weights averaged 78 pounds, a 12 pound increase since 1998
- fawns comprised 46% of the total harvest
- the fawn per doe harvest ratio (FDR) is 1.26, indicating good reproduction
- fawn weights averaged 53 pounds for males and 50 pounds for females, up 18 pounds since 1998
- yearling bucks currently average 87 pounds

Herd Health Evaluation Results and Discussion

Adult females averaged 3 years of age and had an average dressed weight of 81.2 pounds. Fat deposits were moderate as indicated by the condition rating average of 68. One doe had a condition rating of Excellent and one rated Good. Overall the general condition rating for adult females was Fair. Bone marrow fat was nonexistent and rated a Class 6. As expected during the time of collection, no adult females were lactating. A total of 10 fetuses were collected from the 5 adult does. The fetus per adult doe average was 2.0. 70% of the fetuses were male. The average conception date was November 17, 2001. Fetus, or fawn production rates of 2.0 indicate extremely high recruitment of young into the population.

Deer collected during February 2002 exhibited slightly improved physical condition when compared to deer sampled during Winter 2000. The average weight for adult does in 2000 was 77 pounds. The overall condition rating was 70, or Fair. The fetus per doe average was 1.0, with 66% female. The average conception date was November 15, 1999.

Management Recommendations

Deer population control activities conducted on Bull Run Regional Park have proven to be very effective. The deer population is getting close to the desired density level. Body weights show improvement and reproductive rates have increased. Both of these facts can be expected as the deer population is reduced.

My recommendations are to continue monitoring the population growth by conducting spotlight counts in late August and to implement reduction activities as needed.

Please let me know if you have any questions about these reports. I look forward to assisting you with your future deer management programs.

Sincerely,

Dan Lovelace
Wildlife Biologist

Table 1. DEER HERD HEALTH EVALUATION, DATA SUMMARY

DATE: Jan. 15, 2002 COUNTY: Fairfax AREA: Bull Run R. P.

Deer #	Sex	Age	Dressed Weight	Condition Rating	B.M.	General Condition	Fetus(es)	Conception Date
1	F	4	78	90	5	Excellent	M, F	11-21-01
2	F	3	84	50	6	Fair	M, M	11-10-01
3	F	2	80	65	6	Fair	M, M	11-10-01
4	F	3	69	60	6	Fair	M, F	11-23-01
5	F	3	95	75	6	Good	M, F	11-12-01
6	M	1.7	113	65	6	Fair		

AVERAGES	# in Sample	Dressed Weight	Condition Rating	B.M.	General Condition	Fetus(es) per Doe	Avg. Cncp. Date
Ad. Females	5	81.2	68	6	Fair	2.0	11-17-01
Yrling Male	1	113	65	6	Fair		

March 21, 2002

Mr. Rodney Pryor
Northern Virginia Regional Park Authority
5400 Ox Road
Fairfax Station, VA 22039

Dear Rodney:

As you recall, twenty-three deer were taken during the Upper Potomac/Alger managed hunt on January 17, 2002. I conducted a necropsy on two deer, the results are displayed in Table 1. The Harvest Summary is attached.

The Harvest Summary provides details about the current harvest and allows us to compare data from pervious years. Of the twenty-three deer taken in January, eleven were male and twelve were female. Ten of the twenty-three deer were fawns. Fawn dressed weights, males 44 pounds and females 41 pounds, showed a continued decline. In 1997 the fawn dressed weight averages were male-56 and female-49. Conversely, yearling male and female weights have steadily improved. The current yearling male dressed weight average of 99 pounds is very good.

The necropsy results show that the deer are in Fair condition. Fat deposits were moderate. Bone marrow fat was nonexistent. The yearling and adult doe had both produced two fetuses. The conception dates were determined to be November 22 for the yearling doe and November 10 for the adult.

The managed deer hunts and previous herd reduction efforts have kept the growth of this deer population somewhat under control. The harvest of twenty-three deer was a surprise, yet may have been expected after two previous reductions of 140 and 132 deer. The deer remain in fair condition and as expected are responding with increased fawn production rates. Continued monitoring of the deer population will be necessary to determine future management needs. The Upper Potomac property would be an ideal site for unsupervised archery hunting during the regular hunting season.

Please let me know if you have questions about this report. I look forward to assisting you with future deer management decisions.

Sincerely,

Dan Lovelace
Wildlife Biologist

Table 1. DEER HERD HEALTH EVALUATION, DATA SUMMARY

DATE: Jan. 17, 2002, COUNTY: Fairfax AREA: Upper Potomac R. P.

Deer #	Sex	Age	Dressed Weight	Condition Rating	B.M.	General Condition	Fetus(es)	Conception Date
1	F	1.6	82	65	6	Fair	M, M	11-22-01
2	F	3	81	60	6	Fair	F, F	11-10-01

January 29, 2002

Mr. Greg Weiler
Refuge Manager
Mason Neck NWR
14344 Jefferson Davis HWY
Woodbridge, VA 22191

Mr. Jeff Foster
Mason Neck State Park
7301 High Point Road
Lorton, VA 22709

Dear Greg and Jeff:

I appreciate your cooperation in allowing the Virginia Department of Game and Inland Fisheries (VDGIF) to assist you in managing the deer population at Mason Neck National Wildlife Refuge and State Park.

On November 26, 2001, VDGIF, with the assistance of your staff, conducted a complete necropsy of fifteen female deer taken during the managed hunt. The data from the evaluation is summarized in Table 1. I have also included information that further explains the Deer Herd Health Evaluation process. At your convenience I would be glad to meet to discuss these results and future deer management activities on Mason Neck.

Sincerely,

Dan Lovelace
Wildlife Biologist

Table 1. DEER HERD HEALTH EVALUATION, DATA SUMMARY

DATE: Nov. 26, 2001 COUNTY: Fairfax AREA: Mason Neck NWR / S.P.

Deer #	Sex	Age	Dressed Weight	Condition Rating	Marrow	Lactation	General Condition
1	F	1.5	65	50	5	N	Fair
2	F	3	68	50	5	Y	Fair
3	F	2	71	50	5	Y	Fair
4	F	7	78	45	5	Y	Fair
5	F	2	81	65	5	Y	Fair
6	F	1.5	60	55	5	N	Fair
7	F	3	66	50	5	Y	Fair
8	F	3	74	55	5	N	Fair
9	F	1.6	60	35	5	N	Poor
10	F	3	62	45	5	Y	Fair
11	F	2	78	55	5	Y	Fair
12	F	3	84	70	5	N	Good
13	F	1.7	63	60	5	N	Fair
14	F	2	72	60	5	Y	Fair
15	F	2	73	65	5	N	Fair

AVERAGES	# in Sample	Dressed Weight	Condition Rating	Marrow	Lactation	General Condition
Ad. Females	11	73	55	5	73%	Fair
1.5 Females	4	62	50	5	0%	Fair

Results and Discussion

The yearling and adult female deer sampled were in fair physical condition. Yearling females had an average dressed weight of 62 pounds. Body fat deposits were moderate. The physical condition rating averaged 50. Bone marrow fat was nonexistent and averaged a Class 5 on the New Hampshire Bone Marrow Scale. No lactation was observed in the yearling doe sample. The overall general condition rating for yearling females was Fair.

Adult females averaged 3 years of age and had an average dressed weight of 73 pounds. Fat deposits were moderate as indicated by the condition rating average of 55. As with the yearlings, bone marrow fat was minimal and rated a Class 5. 73% of the adult females were lactating. The overall general condition rating for adult females was Fair.

Results and Discussion (cont.)

When comparing previous harvest or herd health data, a complex picture of the deer population's condition unfolds. Yearling female dressed weights were significantly lower than those recorded in 2000. Last year the yearling average weight was 72 pounds. The 11 year average of yearling female dressed weights is 69.5 pounds. Adult female dressed weights were slightly below the 76 pound average recorded last year. Looking back, a deer herd evaluation conducted during October 1986, indicates adult female dressed weights averaged 74 pounds, while yearling female dressed weights averaged 53.5 pounds. Observations during November 2001 evaluation indicate fair to good deposits of visceral fat, whereas bone marrow fat deposits were very poor. The same observations were recorded during the 1986 evaluation.

As mentioned in the 2000 DMAP report, the deer population is in a "steady state" with the habitat. Both deer and habitat conditions are fair. Neither is improving at a faster rate. In fact, the high deer density is limiting the habitat improvement potential. The Mason Neck deer population is responding to the seasonal availability of food. Evidence of this is shown with the continued high reproduction rates and with the short term deposits of visceral fat. Long term impacts of high deer numbers and marginal nutrition are reflected in the poor development of bone marrow fat deposits.

Management Recommendations

The continued reduction of deer, with particular emphasis on adult and yearling females, is recommended.

DEER HERD HEALTH EVALUATION

During the deer herd health evaluation process, the sex, age, and weight was determined for each deer. Obvious signs of disease or parasites were recorded. Observations were made of general condition, including fat deposits and muscle development. Bone marrow fat deposits were inspected and classified. Female deer were inspected for lactation. The following information further explains the health evaluation process and should provide a better understanding of the data summary.

Age

The age is expressed in years and months. Using June as the birth month, fawns taken in September would be 4 months old or .4. The ages of yearling deer are given as 1.4, 1.5, 1.6, and 1.7. Ages for adult deer are represented by the year: 2, 3, 4, 5, etc.

Weight

Body weight, even though it is variable with respect to age, sex, and season of the year, is measurable to determine deer condition. The weight of the eviscerated carcass, or dressed weight, is used by VDGIF.

General Condition

The general condition rating is based on the evaluation of fat deposits and musculature development. The presence of fat is determined at six indicator sites including, the heart and pericardium, omentum, kidneys, rump, and brisket. Musculature is rated as either bony or full. Muscle tissue develops and fat is deposited around the internal organs when forage conditions are good. The rating values are:

Fat Deposits			Musculature		
No visible fat	=	0	Bony	=	0
Slight amount of fat	=	5	Full	=	5
Moderate amount of fat	=	10			
Heavy amount of fat	=	15			

The ratings, when totaled, indicate the General Condition based on the scale:

Emaciated	=	0-10
Poor	=	11-40
Fair	=	41-70
Good	=	71-80
Excellent	=	81-95

Bone Marrow Fat Observation

Investigation of the femur bone marrow fat provides further insight into a deer's health. Bone marrow fat reserves are one of the last sites from which a deer's body drains energy. The New Hampshire Classification method ranks bone marrow from solid (1) to jell-like (6). Solid white bone marrow, Rated 1 on the scale, indicates the deer was in excellent health and capable of obtaining a proper diet. Rating of a 6 indicates the deer was emaciated.

Lactation

Yearling and adult does are checked for lactation, the presence of milk. Production of milk is an indicator that the doe had produced at least one fawn.

Disease & Parasites

Inspections for presence of disease and parasites were conducted. The deer population has been unaffected by any serious diseases. No symptoms of the most common deer ailment, Epizootic Hemorrhagic Disease, were observed.

External parasites, such as the "Deer Tick," have been observed during fall evaluations, but not in any abnormal concentrations.

Three different tick species, *Ixodes scapularis*, *Amblyomma americanum* and *Amblyomma maculatum*, were identified as occurring on deer in Fairfax County during herd health evaluations conducted by the Southeastern Cooperative Wildlife Disease Study at Mason Neck Wildlife Refuge in 1988, 1990, and 1992. Two of these ticks are vectors of serious human diseases. *Ixodes scapularis* is the primary vector for Lyme disease and *Amblyomma americanum*, the Lone Star Tick, is a vector for human monocytic erlichiosis.